

Claims

We claim:

1. A variable reluctance electric motor comprising:

5 a stator formed having a plurality of individual phase segments which are arranged in an annular array, the segments being provided with phase windings and stator pole teeth, said phase segments being connected with a stationary bearing race, and said pole teeth projecting in a generally radial direction; and

a rotor formed integrally with a bearing race, said rotor being vertically supported by said stator by a plurality of bearing members, said stator having a plurality of rotor pole teeth disposed adjacent said stator pole teeth, said rotor pole teeth being separated from said stator pole teeth by a first vertical gap.

2. A variable reluctance motor as described in Claim 1 wherein said bearing members are ball bearings.

3. A variable reluctance motor as described in Claim 1 wherein said rotor is surrounded by said stator.

4. A variable reluctance motor as described in Claim 3 wherein said rotor has a large central opening.

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5. A variable reluctance motor as described in Claim 1 wherein said rotor and said stator have pole teeth facing each other across two vertical annular gaps.

6. A variable reluctance motor as described in Claim 1 wherein said stator has a coil winding which is vertically suspended underneath said bearing race of said stator.

7. A variable reluctance motor as described in Claim 1 wherein said rotor has a core which is vertically suspended underneath said bearing race of said rotor.

8. A variable reluctance motor as described in Claim 1 wherein said stator has a core which is supported underneath a base connected with said stator race.

9. An aimable ordinance platform for a defense vehicle powered by a variable reluctance electric motor comprising:

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a base connected with a stator formed having a plurality of individual phase segments which are arranged in an annular array, the segments being provided with phase windings and stator pole teeth, said phase segments being connected with a stationary bearing race, and said pole teeth projecting in a generally radial direction; and

a rotor formed integrally with a bearing race, said rotor being vertically supported by said stator by a plurality of bearing members, said stator having a plurality

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of rotor pole teeth disposed adjacent said stator pole teeth, said rotor pole teeth being separated from said stator pole teeth by a first vertical gap.

10. An aimable ordinance platform for a defense vehicle as described in Claim 9 wherein said bearing members are ball bearings.

11. An aimable ordinance platform for a defense vehicle as described in Claim 9 wherein said rotor is surrounded by said stator.

12. An aimable ordinance platform for a defense vehicle as described in Claim 9 wherein said rotor has a large central opening.

13. An aimable ordinance platform for a defense vehicle as described in Claim 9 further including a second vertical gap and wherein said rotor and said stator have pole teeth facing each other across two vertical annular gaps.

14. An aimable ordinance platform for a defense vehicle as described in Claim 9 wherein said stator has a coil winding which is vertically supported underneath said bearing race of said stator.

15. An aimable ordinance platform for a defense vehicle as described in Claim 9 wherein said rotor has a core which is vertically suspended underneath said bearing race of said rotor.

16. An aimable ordinance platform for a defense vehicle as described in Claim 9 wherein said stator has a core which is supported on a base connected with said stator race.

17. An aimable ordinance platform as described in Claim 1 wherein a section of said rotor overlaps a section of said stator.

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